

Abstract

A microminiature power converter includes a semiconductor substrate on which a semiconductor integrated circuit is formed, a thin film magnetic induction element, and a capacitor. The thin film magnetic induction element includes a magnetic insulating substrate, and a solenoid coil conductor in which a first conductor is formed on a first principal plane of the magnetic insulating substrate, a second conductor is formed on a second principal plane of the magnetic insulating substrate, and a connection conductor is formed in a through hole passing through the magnetic insulating substrate are connected. A relationship of a length L of the magnetic insulating substrate in a direction vertical to a magnetic field generated by the solenoid coil and a length d of the coil conductor is $d \geq L/2$.